Biometric, forensic sciences find home in Mountain State

by Sarah Nagem
CORRESPONDENT

MORGANTOWN — Biometrics isn't a new science. It's just that West Virginia hasn't always been a hub for biometrics research.

Sen. Robert C. Byrd, D-W.Va., is mainly responsible for the high-technology research having a focus in the state.

Byrd has gotten millions of dollars in federal funding for research mainly based in Harrison County.

Byrd

There, the Biometrics Fusion Center tests and evaluates biometric products and shares the results with the U.S. Department of Defense and other governmental departments.

Cava

Of course, Clarksburg is also home to a major FBI center that focuses on identification. Interest in the science expanded from there and spread to the state's biggest university.

West Virginia University has now received national recognition for its rare degrees offered in forensics and biometrics.

It seems everyone wants in on the scientific action.

Millions of viewers tune in every week to catch "CSI: Crime Scene Investigation" on CBS, where they can get up close and personal with blood and gore.

And enrollment has skyrocketed in WVU's biometric and forensic programs.

Dr. Edwin Rood, director of the Biometric Knowledge Center at WVU, has an easy way to distinguish between the two:

Biometrics is used before a crime, while forensics is employed after.

Both use the same means to determine a person's identity — fingerprints, hand and iris patterns and facial recognition.

Investigators use forensic evidence in determining the culprit of a crime. WVU has a special "house" on campus that is set up as a crime scene for students to investigate, Rood said.

Officials can use biometrics to determine if someone is a known criminal, he said.

Biometrics has been used for about 100 years in the form of fingerprint identity, Rood said, but the 9/11 terrorist attacks on the World Trade Center and the Pentagon brought biometrics into the national spotlight.

Much of the focus now is on using biometrics to track down terrorists for national security purposes.

"People think it's the ultimate solution, but it's not," Rood said.

While biometrics is a valuable tool, he said, you can't underestimate human judgment. After all, computers can make mistakes, especially when they're dealing with a large database.

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For instance, Rood said, government officials may determine whether a suspected terrorist is truly a terrorist by comparing his or her biometrics to the biometrics of many known terrorists. With a small error rate, the technology may misidentify people, he said.

Current research addresses such issues. WVU's Biometric Knowledge Center serves as a network, in conjunction with the federal government, to bring information together that institutions across the country have gathered.

No one institution in the country has the capacity to do all the research alone, Rood said.

The research has a variety of components. Technological research focuses on the basics, like how to measure a fingerprint.

Other research measures the accuracy of biometrics systems — like how difficult it is to use biometrics to determine whether someone has more than one driver's license.

With millions of driver's licenses in the country, it is difficult to ascertain, Rood said.

Some research focuses on societal implications, while other research deals with economics and the work force.

For example, it's important to learn whether many people would stop flying if biometrics were used at airports because it would increase wait time, Rood said.

If the error rate for a biometric system is 1 percent, one out of 100 people in an airport will be misidentified. Rood said the error rate is usually much less than 1 percent, though.

Sam Cava, director of the Biometric Fusion Center, said WVU works in conjunction with the center. An important element of research, he said, is creating access to networks based on a person's physical traits.

Such technology allows officials to freeze on a person's identity, Cava said.

Biometrics isn't only about national security, though, Cava said. Some businesses are using biometrics systems as a way of tracking customer use.

Tanning World in Morgantown asks customers to use a fingerprint scanner when they go for their tanning sessions, Cava said. This ensures that customers aren't sharing pre-paid packages.